RESULT 3
US-10-121-857-53
; Sequence 53, Application US/10121857
; Patent No. 6822141
; GENERAL INFORMATION:
; APPLICANT: Lardizabal, Kathryn D
; APPLICANT: Hawkins, Deborah J
; APPLICANT: Thompson, Gregory A
; TITLE OF INVENTION: Diacylglycerol Acyltransferase Proteins
; FILE REFERENCE: 16515.143
; CURRENT APPLICATION NUMBER: US/10/121,857
; CURRENT FILING DATE: 2002-04-15
; PRIOR APPLICATION NUMBER: US 09/345,461
; PRIOR FILING DATE: 1999-06-30
; PRIOR APPLICATION NUMBER: US 60/091,631
; PRIOR FILING DATE: 1998-07-02
; PRIOR APPLICATION NUMBER: US 60/130,829
; PRIOR FILING DATE: 1999-04-23
; NUMBER OF SEQ ID NOS: 84
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 53
; LENGTH: 489
; TYPE: DNA
; ORGANISM: Human
; FEATURE:
; NAME/KEY: unsure
; LOCATION: (1)..(489)
; OTHER INFORMATION: unsure at all n locations
US-10-121-857-53

Query Match 29.8%; Score 422.8; DB 3; Length 489;
Best Local Similarity 89.6%; Pred. No. 1.2e-94;
Matches 438; Conservative 0; Mismatches 50; Indels 1; Gaps 1;

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Qy        703 CCCAGCCCCAGC-TCGGGCAGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTG 761
              |||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CCCAGCCCCAGCTTCGGGCAGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTG 60

Qy        762 TATTCAGTCCCCGGGGAGCACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTG 821
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 TATTCAGTCCCCGGGGAGCACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTG 120

Qy        822 GCGCTGAGGCACGGGGCGTCCCTGGTGCCCGTGTACTCCTTTGGGGAGAATGACATCTTT 881
              |||||||||||||||||| | ||||||||||||||||||||||||||||||||||||||||
Db        121 GCGCTGAGGCACGGGGCGTNCNTGGTGCCCGTGTACTCCTTTGGGGAGAATGACATCTTT 180

Qy        882 AGACTTAAGGCTTTTGCCACAGGCTCCTGGCAGCATTGGTGCCAGCTCACCTTCAAGAAG 941
              |||||||||||||||||||||||  |||||||| |||||||||||||||||||||||||
Db        181 AGACTTAAGGCTTTTGCCACAGGNNCCTGGCAGNATTGGTGCCAGCTCACCTTCAAGAAG 240

Qy        942 CTCATGGGCTTCTCTCCTTGCATCTTCTGGGGTCGCGGTCTCTTCTCAGCCACCTCCTGG 1001
              |||||||||||  ||  ||||||||  ||||||||  |||||  ||||||||||||  ||  |||
Db        241 CTCATGGGCTTNTCNCCTTGCATNTTCTGGGGTNGCGGTNTCTTCTCAGCCACNTCNTGG 300

Qy       1002 GGCCTGCTGCCCTTTGCTGTGCCCATCACCACTGTGGTGGGCCGCCCCATCCCCGTCCCC 1061
              |||||||||  ||||||||||||||||||  ||||||||||    |  | ||  || |
Db        301 GGCCTGCTGNNCTTTGCTGTGCCCATCACNACTGTGGTGGNNNGNACNATNNCCNTNAAN 360

Qy       1062 CAGCGCCTCCACCCCACCGAGGAGGAAGTCAATCACTATCACGCCCTCTACATGACGGCC 1121
              |||  ||  ||||||  ||||||||||||  |.|||  |||||  |||   ||||||||||||  |
Db        361 CAGAACCNCCACCCNACCGAGGAGGAAATNAATNACTATNACGNNNTCTACATGACGGNC 420

Qy       1122 CTGGAGCAGCTCTTCGAGGAGCACAAGGAAAGCTGTGGGGTCCCCGCTTCCACCTGCCTC 1181
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                ||||||||| |||||||||||  | ||||||||  |||||||  |||  ||||||||||||  |
Db          421 NTGGAGCAGNTCTTCGAGGAGNANAAGGAAAGNTGTGGGGACCCNGCTTCCACCTGCNTN 480

Qy         1182 ACCTTCATC 1190
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Db          481 ACCTTNATC 489
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RESULT 1
US-10-121-757B-1
; Sequence 1, Application US/10121757B
; Patent No. 6835556
; GENERAL INFORMATION:
;  APPLICANT: Attersand, Anneli
;  TITLE OF INVENTION: Protein Cluster V
;  FILE REFERENCE: 10806-164
;  CURRENT APPLICATION NUMBER: US/10/121,757B
;  CURRENT FILING DATE:  2002-04-12
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 593
;   TYPE: DNA
;   ORGANISM: human
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (3)..(593)
;   OTHER INFORMATION:
US-10-121-757B-1

  Query Match           36.4%;  Score 516.8;  DB 3;  Length 593;
  Best Local Similarity  99.6%;  Pred. No. 9e-118;
  Matches  518;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy        453 AAGCTGGTGAAAACAGCAGAGCTGCCCCCGGATCGGAACTACGTGCTGGGCGCCCACCCT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         66 AAGCTGGTGAAAACAGCAGAGCTGCCCCCGGATCGGAACTACGTGCTGGGCGCCCACCCT 125

Qy        513 CATGGGATCATGTGTACAGGCTTCCTCTGTAATTTCTCCACCGAGAGCAATGGCTTCTCC 572
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db        126 CATGGGATCATGTGTACAGGCTTCCTCTGTAATTTCTCCACCGAGAGCCATGGCTTCTCC 185

Qy        573 CAGCTCTTCCCGGGGCTCCGGCCCTGGTTAGCCGTGCTGGCTGGCCTCTTCTACCTCCCG 632
              |||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||
Db        186 CAGCTCTTCCCGGGGCTCCGGCCCTGGTTATCCGTGCTGGCTGGCCTCTTCTACCTCCCG 245

Qy        633 GTCTATCGCGACTACATCATGTCCTTTGGACTCTGTCCGGTGAGCCGCCAGAGCCTGGAC 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        246 GTCTATCGCGACTACATCATGTCCTTTGGACTCTGTCCGGTGAGCCGCCAGAGCCTGGAC 305

Qy        693 TTCATCCTGTCCCAGCCCCAGCTCGGGCAGGCCGTGGTCATCATGGTGGGGGGTGCGCAC 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        306 TTCATCCTGTCCCAGCCCCAGCTCGGGCAGGCCGTGGTCATCATGGTGGGGGGTGCGCAC 365

Qy        753 GAGGCCCTGTATTCAGTCCCCGGGGAGCACTGCCTTACGCTCCAGAAGCGCAAAGGCTTC 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        366 GAGGCCCTGTATTCAGTCCCCGGGGAGCACTGCCTTACGCTCCAGAAGCGCAAAGGCTTC 425

Qy        813 GTGCGCCTGGCGCTGAGGCACGGGGCGTCCCTGGTGCCCGTGTACTCCTTTGGGGAGAAT 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        426 GTGCGCCTGGCGCTGAGGCACGGGGCGTCCCTGGTGCCCGTGTACTCCTTTGGGGAGAAT 485

Qy        873 GACATCTTTAGACTTAAGGCTTTTGCCACAGGCTCCTGGCAGCATTGGTGCCAGCTCACC 932
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        486 GACATCTTTAGACTTAAGGCTTTTGCCACAGGCTCCTGGCAGCATTGGTGCCAGCTCACC 545

Qy        933 TTCAAGAAGCTCATGGGCTTCTCTCCTTGCATCTTCTGGG 972
              |||||||||||||||||||||||||||||||||||||||
Db        546 TTCAAGAAGCTCATGGGCTTCTCTCCTTGCATCTTCTGGG 585
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111

DNA

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RESULT 3
US-10-324-618-7
; Sequence 7, Application US/10324618
; Publication No. US20030170691A1
; GENERAL INFORMATION:
;  APPLICANT: Gimeno, Ruth
;  APPLICANT:  Wu, Zhidan
;  APPLICANT:  Kapeller-Libermann, Rosana
;  APPLICANT:  Hubbard, Brian K.
;  TITLE OF INVENTION: HUMAN DIACYLGLYCEROL ACYLTRANSFERASE 2
;  TITLE OF INVENTION:  (DGAT2) FAMILY MEMBERS AND USES THEREFOR
;  FILE REFERENCE: MPI01-263P2RM
;  CURRENT APPLICATION NUMBER: US/10/324,618
;  CURRENT FILING DATE:  2002-12-19
;  PRIOR APPLICATION NUMBER: 60/341,947
;  PRIOR FILING DATE: 2002-12-19 (2001-12-19) 1 Year in 2001'
;  PRIOR APPLICATION NUMBER: 60/411,859
;  PRIOR FILING DATE: 2002-09-19
;  NUMBER OF SEQ ID NOS: 65
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 7
;   LENGTH: 1263
;   TYPE: DNA
;   ORGANISM: human
;   FEATURE:
;   NAME/KEY: CDS
;   LOCATION: (171)...(1196)
US-10-324-618-7

  Query Match             86.7%;  Score 1230.6;  DB 7;  Length 1263;
  Best Local Similarity   98.2%;  Pred. No. 0;
  Matches 1238;  Conservative   14;  Mismatches    8;  Indels    1;  Gaps    1;

Qy          1 CACTCACACACCTACGGA-CACACGCTACTCTGGGAGGTGATTTGCGACTTAGCCAGGCC 59
              ||||||||||||||:::::| :::::|:::::|    | |    ||||||||||||||||||
Db          3 CACTCACACACCTMMSKAWMRSRMGYYRMYCCACGCGTCCGTTTGCGACTTAGCCAGGCC 62

Qy         60 CCCAAAGCTGGGCTCCTGTAGGGAGAAAGTCTGCCCAGGTCCACATCCAAGCCTTCATCG 119
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         63 CCCAAAGCTGGGCTCCTGTAGGGAGAAAGTCTGCCCAGGTCCACATCCAAGCCTTCATCG 122

Qy        120 TTTGTCCTCCGGGTTCTGGGATCCTGCTGGAAGAGGGGAGCTTCTGCAATGGGAGTTGCC 179
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        123 TTTGTCCTCCGGGTTCTGGGATCCTGCTGGAAGAGGGGAGCTTCTGCAATGGGAGTTGCC 182

Qy        180 ACAACCCTGCAGCCCCCAACCACTTCCAAAACCTTGCAGAAGCAGCATCTAGAAGCAGTG 239
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        183 ACAACCCTGCAGCCCCCAACCACTTCCAAAACCTTGCAGAAGCAGCATCTAGAAGCAGTG 242

Qy        240 GGCGCCTACCAATATGTGCTCACTTTCCTCTTCATGGGCCCTTTCTTCTCCCTTCTTGTC 299
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        243 GGCGCCTACCAATATGTGCTCACTTTCCTCTTCATGGGCCCTTTCTTCTCCCTTCTTGTC 302

Qy        300 TTTGTCCTCCTCTTCACGTCACTCTGGCCCTTCTCTGTTTTTTACTTGGTGTGGCTCTAT 359
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        303 TTTGTCCTCCTCTTCACGTCACTCTGGCCCTTCTCTGTTTTTTACTTGGTGTGGCTCTAT 362

Qy        360 GTGGACTGGGACACACCCAACCAAGGTGGAAGGCGTTCGGAGTGGATAAGGAACCGGGCA 419
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        363 GTGGACTGGGACACACCCAACCAAGGTGGAAGGCGTTCGGAGTGGATAAGGAACCGGGCA 422

Qy        420 ATTTGGAGACAACTAAGGGATTATTATCCTGTCAAGCTGGTGAAAACAGCAGAGCTGCCC 479
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db        423 ATTTGGAGACAACTAAGGGATTATTATCCTGTCAAGCTGGTGAAAACAGCAGAGCTGCCC 482

Qy        480 CCGGATCGGAACTACGTGCTGGGCGCCCACCCTCATGGGATCATGTGTACAGGCTTCCTC 539
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        483 CCGGATCGGAACTACGTGCTGGGCGCCCACCCTCATGGGATCATGTGTACAGGCTTCCTC 542

Qy        540 TGTAATTTCTCCACCGAGAGCAATGGCTTCTCCCAGCTCTTCCCGGGGCTCCGGCCCTGG 599
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        543 TGTAATTTCTCCACCGAGAGCAATGGCTTCTCCCAGCTCTTCCCGGGGCTCCGGCCCTGG 602

Qy        600 TTAGCCGTGCTGGCTGGCCTCTTCTACCTCCCGGTCTATCGCGACTACATCATGTCCTTT 659
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        603 TTAGCCGTGCTGGCTGGCCTCTTCTACCTCCCGGTCTATCGCGACTACATCATGTCCTTT 662

Qy        660 GGACTCTGTCCGGTGAGCCGCCAGAGCCTGGACTTCATCCTGTCCCAGCCCCAGCTCGGG 719
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        663 GGACTCTGTCCGGTGAGCCGCCAGAGCCTGGACTTCATCCTGTCCCAGCCCCAGCTCGGG 722

Qy        720 CAGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTGTATTCAGTCCCCGGGGAG 779
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        723 CAGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTGTATTCAGTCCCCGGGGAG 782

Qy        780 CACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTGGCGCTGAGGCACGGGGCG 839
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        783 CACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTGGCGCTGAGGCACGGGGCG 842

Qy        840 TCCCTGGTGCCCGTGTACTCCTTTGGGGAGAATGACATCTTTAGACTTAAGGCTTTTGCC 899
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        843 TCCCTGGTGCCCGTGTACTCCTTTGGGGAGAATGACATCTTTAGACTTAAGGCTTTTGCC 902

Qy        900 ACAGGCTCCTGGCAGCATTGGTGCCAGCTCACCTTCAAGAAGCTCATGGGCTTCTCTCCT 959
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        903 ACAGGCTCCTGGCAGCATTGGTGCCAGCTCACCTTCAAGAAGCTCATGGGCTTCTCTCCT 962

Qy        960 TGCATCTTCTGGGGTCGCGGTCTCTTCTCAGCCACCTCCTGGGGCCTGCTGCCCTTTGCT 1019
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        963 TGCATCTTCTGGGGTCGCGGTCTCTTCTCAGCCACCTCCTGGGGCCTGCTGCCCTTTGCT 1022

Qy       1020 GTGCCCATCACCACTGTGGTGGGCCGCCCCATCCCCGTCCCCCAGCGCCTCCACCCCACC 1079
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1023 GTGCCCATCACCACTGTGGTGGGCCGCCCCATCCCCGTCCCCCAGCGCCTCCACCCCACC 1082

Qy       1080 GAGGAGGAAGTCAATCACTATCACGCCCTCTACATGACGGCCCTGGAGCAGCTCTTCGAG 1139
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1083 GAGGAGGAAGTCAATCACTATCACGCCCTCTACATGACGGCCCTGGAGCAGCTCTTCGAG 1142

Qy       1140 GAGCACAAGGAAAGCTGTGGGGTCCCCGCTTCCACCTGCCTCACCTTCATCTAGGCCTGG 1199
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1143 GAGCACAAGGAAAGCTGTGGGGTCCCCGCTTCCACCTGCCTCACCTTCATCTAGGCCTGG 1202

Qy       1200 CCGCGGCCTTTCGCTGAGCCCCTGAGCCCAAGGCACTGAGACCTCCACCCACTGTGGACT 1259
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1203 CCGCGGCCTTTCGCTGAGCCCCTGAGCCCAAGGCACTGAGACCTCCACCCACTGTGGACT 1262

Qy       1260 C 1260
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Db       1263 C 1263
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IV

Protein

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RESULT 1
US-10-324-618-8
; Sequence 8, Application US/10324618
; Publication No. US20030170691A1
; GENERAL INFORMATION:
;  APPLICANT: Gimeno, Ruth
;  APPLICANT:  Wu, Zhidan
;  APPLICANT:  Kapeller-Libermann, Rosana
;  APPLICANT:  Hubbard, Brian K.
;  TITLE OF INVENTION: HUMAN DIACYLGLYCEROL ACYLTRANSFERASE 2
;  TITLE OF INVENTION:  (DGAT2) FAMILY MEMBERS AND USES THEREFOR
;  FILE REFERENCE: MPI01-263P2RM
;  CURRENT APPLICATION NUMBER: US/10/324,618
;  CURRENT FILING DATE:  2002-12-19
;  PRIOR APPLICATION NUMBER: 60/341,947
;  PRIOR FILING DATE: 2002-12-19 (2001-12-19) 1 year in 2001'
;  PRIOR APPLICATION NUMBER: 60/411,859
;  PRIOR FILING DATE: 2002-09-19
;  NUMBER OF SEQ ID NOS: 65
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8
;   LENGTH: 341
;   TYPE: PRT
;   ORGANISM: human
US-10-324-618-8

  Query Match             100.0%;  Score 1849;  DB 4;  Length 341;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-183;
  Matches  341;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MGVATTLQPPTTSKTLQKQHLEAVGAYQYVLTFLFMGPFFSLLVFVLLFTSLWPFSVFYL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MGVATTLQPPTTSKTLQKQHLEAVGAYQYVLTFLFMGPFFSLLVFVLLFTSLWPFSVFYL 60

Qy         61 VWLYVDWDTPNQGGRRSEWIRNRAIWRQLRDYYPVKLVKTAELPPDRNYVLGAHPHGIMC 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 VWLYVDWDTPNQGGRRSEWIRNRAIWRQLRDYYPVKLVKTAELPPDRNYVLGAHPHGIMC 120

Qy        121 TGFLCNFSTESNGFSQLFPGLRPWLAVLAGLFYLPVYRDYIMSFGLCPVSRQSLDFILSQ 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TGFLCNFSTESNGFSQLFPGLRPWLAVLAGLFYLPVYRDYIMSFGLCPVSRQSLDFILSQ 180

Qy        181 PQLGQAVVIMVGGAHEALYSVPGEHCLTLQKRKGFVRLALRHGASLVPVYSFGENDIFRL 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 PQLGQAVVIMVGGAHEALYSVPGEHCLTLQKRKGFVRLALRHGASLVPVYSFGENDIFRL 240

Qy        241 KAFATGSWQHWCQLTFKKLMGFSPCIFWGRGLFSATSWGLLPFAVPITTVVGRPIPVPQR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 KAFATGSWQHWCQLTFKKLMGFSPCIFWGRGLFSATSWGLLPFAVPITTVVGRPIPVPQR 300

Qy        301 LHPTEEEVNHYHALYMTALEQLFEEHKESCGVPASTCLTFI 341
              |||||||||||||||||||||||||||||||||||||||||
Db        301 LHPTEEEVNHYHALYMTALEQLFEEHKESCGVPASTCLTFI 341
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RESULT 1
AAE37787
ID AAE37787 standard; protein; 341 AA.
XX
AC AAE37787;
XX
DT 06-NOV-2003 (first entry)
XX
DE Human diacylglycerol acyltransferase 2 (DGAT2), 60489.
XX
KW Human; diacylglycerol acyltransferase 2; DGAT2; obesity; arrhythmia;
KW coronary artery disease; hypertension; heart failure; tissue typing;
KW aberrant lipogenesis; cardiovascular disorder; atherosclerosis; angina;
KW atrial fibrillation; dilated cardiomyopathy; idiopathic cardiomyopathy;
KW diabetes; chromosome mapping; forensic biology; enzyme.
XX
OS Homo sapiens.
XX
PN WO2003053363-A2.
XX
PD 03-JUL-2003.
XX
PF 19-DEC-2002; 2002WO-US040974.
XX
PR 19-DEC-2001; 2001US-0341947P.
PR 19-SEP-2002; 2002US-0411859P.
XX
PA (MILL-) MILLENNIUM PHARM INC.
XX
PI Gimeno RE, Wu Z, Kapeller-Libermann R, Hubbard BK;
XX
DR WPI; 2003-559092/52.
DR N-PSDB; AAD56887.
XX
PT New human diacylglycerol acyltransferase 2 (DGAT2) family member
PT polypeptide and nucleic acid molecules, useful for diagnosing and
PT treating obesity, diabetes, atherosclerosis, aberrant lipogenesis or
PT triglyceride synthesis.
XX
PS Claim 6; Page 126-127; 154pp; English.
XX
CC The invention relates to human diacylglycerol acyltransferase 2 (DGAT2)
CC family members and their uses. DGAT2 family member sequences or their
CC modulators are useful for diagnosing and treating a subject with a
CC disorder associated with the aberrant DGAT family member polypeptide
CC activity or nucleic acid expression, such as a disorder associated with
CC obesity, diabetes, aberrant lipogenesis or triglyceride synthesis, or
CC cardiovascular disorder (e.g. atherosclerosis, coronary artery disease,
CC hypertension, heart failure, atrial fibrillation, arrhythmias, dilated
CC cardiomyopathy, idiopathic cardiomyopathy or angina). The invention is
CC also useful in screening assays (e.g. tissue typing, chromosome mapping,
CC or in forensic biology), in predictive medicine (e.g. diagnostic assays,
CC prognostic assays, monitoring clinical trials or pharmacogenetics), or as
CC surrogate markers (e.g. markers of disease states or markers of drug
CC activity). The present sequence is human DGAT2 protein
XX
SQ Sequence 341 AA;

Query Match 100.0%; Score 1849; DB 6; Length 341;
Best Local Similarity 100.0%; Pred. No. 4.6e-202;
Matches 341; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MGVATTLQPPTTSKTLQKQHLEAVGAYQYVLTFLFMGPFFSLLVFVLLFTSLWPFSVFYL 60

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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db            1 MGVATTLQPPTTSKTLQKQHLEAVGAYQYVLTFLFMGPFFSLLVFVLLFTSLWPFSVFYL 60

Qy           61 VWLYVDWDTPNQGGRRSEWIRNRAIWRQLRDYYPVKLVKTAELPPDRNYVLGAHPHGIMC 120
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           61 VWLYVDWDTPNQGGRRSEWIRNRAIWRQLRDYYPVKLVKTAELPPDRNYVLGAHPHGIMC 120

Qy          121 TGFLCNFSTESNGFSQLFPGLRPWLAVLAGLFYLPVYRDYIMSFGLCPVSRQSLDFILSQ 180
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Db          121 TGFLCNFSTESNGFSQLFPGLRPWLAVLAGLFYLPVYRDYIMSFGLCPVSRQSLDFILSQ 180

Qy          181 PQLGQAVVIMVGGAHEALYSVPGEHCLTLQKRKGFVRLALRHGASLVPVYSFGENDIFRL 240
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          181 PQLGQAVVIMVGGAHEALYSVPGEHCLTLQKRKGFVRLALRHGASLVPVYSFGENDIFRL 240

Qy          241 KAFATGSWQHWCQLTFKKLMGFSPCIFWGRGLFSATSWGLLPFAVPITTVVGRPIPVPQR 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          241 KAFATGSWQHWCQLTFKKLMGFSPCIFWGRGLFSATSWGLLPFAVPITTVVGRPIPVPQR 300

Qy          301 LHPTEEEVNHYHALYMTALEQLFEEHKESCGVPASTCLTFI 341
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Db          301 LHPTEEEVNHYHALYMTALEQLFEEHKESCGVPASTCLTFI 341
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RESULT 3
AAD56887
ID AAD56887 standard; cDNA; 1263 BP.
XX
AC AAD56887;
XX
DT 06-NOV-2003 (first entry)
XX
DE Human diacylglycerol acyltransferase 2 (DGAT2) cDNA, 60489.
XX
KW Human; diacylglycerol acyltransferase 2; DGAT2; obesity; arrhythmia;
KW coronary artery disease; hypertension; heart failure; tissue typing;
KW aberrant lipogenesis; cardiovascular disorder; atherosclerosis; angina;
KW atrial fibrillation; dilated cardiomyopathy; idiopathic cardiomyopathy;
KW diabetes; chromosome mapping; forensic biology; enzyme; gene; ss.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT CDS 171. .1196
FT /*tag= a
FT /product= "Human diacylglycerol acyltransferase 2"
XX
PN WO2003053363-A2.
XX
PD 03-JUL-2003.
XX
PF 19-DEC-2002; 2002WO-US040974.
XX
PR 19-DEC-2001; 2001US-0341947P.
PR 19-SEP-2002; 2002US-0411859P.
XX
PA (MILL-) MILLENNIUM PHARM INC.
XX
PI Gimeno RE, Wu Z, Kapeller-Libermann R, Hubbard BK;
XX
DR WPI; 2003-559092/52.
DR P-PSDB; AAE37787.
XX
PT New human diacylglycerol acyltransferase 2 (DGAT2) family member
PT polypeptide and nucleic acid molecules, useful for diagnosing and
PT treating obesity, diabetes, atherosclerosis, aberrant lipogenesis or
PT triglyceride synthesis.
XX
PS Claim 1; Page 125-126; 154pp; English.
XX
CC The invention relates to human diacylglycerol acyltransferase 2 (DGAT2)
CC family members and their uses. DGAT2 family member sequences or their
CC modulators are useful for diagnosing and treating a subject with a
CC disorder associated with the aberrant DGAT family member polypeptide
CC activity or nucleic acid expression, such as a disorder associated with
CC obesity, diabetes, aberrant lipogenesis or triglyceride synthesis, or
CC cardiovascular disorder (e.g. atherosclerosis, coronary artery disease,
CC hypertension, heart failure, atrial fibrillation, arrhythmias, dilated
CC cardiomyopathy, idiopathic cardiomyopathy or angina). The invention is
CC also useful in screening assays (e.g. tissue typing, chromosome mapping,
CC or in forensic biology), in predictive medicine (e.g. diagnostic assays,
CC prognostic assays, monitoring clinical trials or pharmacogenetics), or as
CC surrogate markers (e.g. markers of disease states or markers of drug
CC activity). The present sequence is human DGAT2 cDNA
XX
SQ Sequence 1263 BP; 215 A; 418 C; 325 G; 290 T; 0 U; 15 Other;

Query Match 86.7%; Score 1230.6; DB 9; Length 1263;
Best Local Similarity 98.2%; Pred. No. 3.3e-300;
Matches 1238; Conservative 14; Mismatches 8; Indels 1; Gaps 1;

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Qy          1 CACTCACACACCTACGGA-CACACGCTACTCTGGGAGGTGATTTGCGACTTAGCCAGGCC 59
              ||||||||||||||:::::| :::::|:::::|   | |    ||||||||||||||||||
Db          3 CACTCACACACCTMMSKAWMRSRMGYYRMYCCACGCGTCCGTTTGCGACTTAGCCAGGCC 62

Qy         60 CCCAAAGCTGGGCTCCTGTAGGGAGAAAGTCTGCCCAGGTCCACATCCAAGCCTTCATCG 119
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         63 CCCAAAGCTGGGCTCCTGTAGGGAGAAAGTCTGCCCAGGTCCACATCCAAGCCTTCATCG 122

Qy        120 TTTGTCCTCCGGGTTCTGGGATCCTGCTGGAAGAGGGGAGCTTCTGCAATGGGAGTTGCC 179
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        123 TTTGTCCTCCGGGTTCTGGGATCCTGCTGGAAGAGGGGAGCTTCTGCAATGGGAGTTGCC 182

Qy        180 ACAACCCTGCAGCCCCCAACCACTTCCAAAACCTTGCAGAAGCAGCATCTAGAAGCAGTG 239
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        183 ACAACCCTGCAGCCCCCAACCACTTCCAAAACCTTGCAGAAGCAGCATCTAGAAGCAGTG 242

Qy        240 GGCGCCTACCAATATGTGCTCACTTTCCTCTTCATGGGCCCTTTCTTCTCCCTTCTTGTC 299
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        243 GGCGCCTACCAATATGTGCTCACTTTCCTCTTCATGGGCCCTTTCTTCTCCCTTCTTGTC 302

Qy        300 TTTGTCCTCCTCTTCACGTCACTCTGGCCCTTCTCTGTTTTTTACTTGGTGTGGCTCTAT 359
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        303 TTTGTCCTCCTCTTCACGTCACTCTGGCCCTTCTCTGTTTTTTACTTGGTGTGGCTCTAT 362

Qy        360 GTGGACTGGGACACACCCAACCAAGGTGGAAGGCGTTCGGAGTGGATAAGGAACCGGGCA 419
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        363 GTGGACTGGGACACACCCAACCAAGGTGGAAGGCGTTCGGAGTGGATAAGGAACCGGGCA 422

Qy        420 ATTTGGAGACAACTAAGGGATTATTATCCTGTCAAGCTGGTGAAAACAGCAGAGCTGCCC 479
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        423 ATTTGGAGACAACTAAGGGATTATTATCCTGTCAAGCTGGTGAAAACAGCAGAGCTGCCC 482

Qy        480 CCGGATCGGAACTACGTGCTGGGCGCCCACCCTCATGGGATCATGTGTACAGGCTTCCTC 539
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        483 CCGGATCGGAACTACGTGCTGGGCGCCCACCCTCATGGGATCATGTGTACAGGCTTCCTC 542

Qy        540 TGTAATTTCTCCACCGAGAGCAATGGCTTCTCCCAGCTCTTCCCGGGGCTCCGGCCCTGG 599
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Db        543 TGTAATTTCTCCACCGAGAGCAATGGCTTCTCCCAGCTCTTCCCGGGGCTCCGGCCCTGG 602

Qy        600 TTAGCCGTGCTGGCTGGCCTCTTCTACCTCCCGGTCTATCGCGACTACATCATGTCCTTT 659
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Db        603 TTAGCCGTGCTGGCTGGCCTCTTCTACCTCCCGGTCTATCGCGACTACATCATGTCCTTT 662

Qy        660 GGACTCTGTCCGGTGAGCCGCCAGAGCCTGGACTTCATCCTGTCCCAGCCCCAGCTCGGG 719
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Db        663 GGACTCTGTCCGGTGAGCCGCCAGAGCCTGGACTTCATCCTGTCCCAGCCCCAGCTCGGG 722

Qy        720 CAGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTGTATTCAGTCCCCGGGGAG 779
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Db        723 CAGGCCGTGGTCATCATGGTGGGGGGTGCGCACGAGGCCCTGTATTCAGTCCCCGGGGAG 782

Qy        780 CACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTGGCGCTGAGGCACGGGGCG 839
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        783 CACTGCCTTACGCTCCAGAAGCGCAAAGGCTTCGTGCGCCTGGCGCTGAGGCACGGGGCG 842

Qy        840 TCCCTGGTGCCCGTGTACTCCTTTGGGGAGAATGACATCTTTAGACTTAAGGCTTTTGCC 899
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Db        843 TCCCTGGTGCCCGTGTACTCCTTTGGGGAGAATGACATCTTTAGACTTAAGGCTTTTGCC 902
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Qy        900 ACAGGCTCCTGGCAGCATTGGTGCCAGCTCACCTTCAAGAAGCTCATGGGCTTCTCTCCT 959
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Db        903 ACAGGCTCCTGGCAGCATTGGTGCCAGCTCACCTTCAAGAAGCTCATGGGCTTCTCTCCT 962

Qy        960 TGCATCTTCTGGGGTCGCGGTCTCTTCTCAGCCACCTCCTGGGGCCTGCTGCCCTTTGCT 1019
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        963 TGCATCTTCTGGGGTCGCGGTCTCTTCTCAGCCACCTCCTGGGGCCTGCTGCCCTTTGCT 1022

Qy       1020 GTGCCCATCACCACTGTGGTGGGCCGCCCCATCCCCGTCCCCCAGCGCCTCCACCCCACC 1079
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1023 GTGCCCATCACCACTGTGGTGGGCCGCCCCATCCCCGTCCCCCAGCGCCTCCACCCCACC 1082

Qy       1080 GAGGAGGAAGTCAATCACTATCACGCCCTCTACATGACGGCCCTGGAGCAGCTCTTCGAG 1139
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1083 GAGGAGGAAGTCAATCACTATCACGCCCTCTACATGACGGCCCTGGAGCAGCTCTTCGAG 1142

Qy       1140 GAGCACAAGGAAAGCTGTGGGGTCCCCGCTTCCACCTGCCTCACCTTCATCTAGGCCTGG 1199
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1143 GAGCACAAGGAAAGCTGTGGGGTCCCCGCTTCCACCTGCCTCACCTTCATCTAGGCCTGG 1202

Qy       1200 CCGCGGCCTTTCGCTGAGCCCCTGAGCCCAAGGCACTGAGACCTCCACCCACTGTGGACT 1259
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1203 CCGCGGCCTTTCGCTGAGCCCCTGAGCCCAAGGCACTGAGACCTCCACCCACTGTGGACT 1262

Qy       1260 C 1260
              |
Db       1263 C 1263
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Search Results - Record(s) 1 through 3 of 3 returned.

☐ 1. Document ID: US 20040223959 A1

L4: Entry 1 of 3 File: PGPB Nov 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040223959
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040223959 A1

TITLE: Polynucleotide encoding a novel acyl coenzyme a, monoacylglycerol acyltransferase-3 (MGAT3), and uses thereof

PUBLICATION-DATE: November 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Feder, John N.	Belle Mead	NJ	US
Nelson, Thomas C.	Lawrenceville	NJ	US
Chen, Jian	Princeton	NJ	US
Meegalla, Rupalie	Boothwyn	PA	US
Ramaker, Michael	Greenville	DE	US
Cheng, Dong	Furlong	PA	US

US-CL-CURRENT: 424/94.5; 435/193, 435/320.1, 435/325, 435/6, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw. Desc | Image

☐ 2. Document ID: WO 2004065551 A2

L4: Entry 2 of 3 File: EPAB Aug 5, 2004

PUB-NO: WO2004065551A2
DOCUMENT-IDENTIFIER: WO 2004065551 A2
TITLE: POLYNUCLEOTIDE ENCODING A NOVEL ACYL COENZYME A, MONOACYLGLYCEROL ACYLTRANSFERASE-3 (MGAT3), AND USES THEREOF

PUBN-DATE: August 5, 2004

INVENTOR-INFORMATION:

NAME	COUNTRY
FEDER, JOHN N	US
NELSON, THOMAS C	US
CHEN, JIAN	US
MEEGALLA, RUPALIE	US
RAMAKER, MICHAEL	US
CHENG, DONG	US

INT-CL (IPC): C12 N 0/
EUR-CL (EPC): C12N009/10

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Drawi Desc | Image

☐ 3. Document ID: MX 2005007615 A1, WO 2004065551 A2, US 20040223959 A1, AU 2004206250 A1, EP 1585815 A2

L4: Entry 3 of 3 File: DWPI Oct 1, 2005

DERWENT-ACC-NO: 2004-562157
DERWENT-WEEK: 200620
COPYRIGHT 2006 DERWENT INFORMATION LTD
TITLE: New nucleic acid molecules encoding a monoacylglycerol acyltransferase-3 (MGAT3), useful for preventing, treating, or ameliorating obesity or gastrointestinal disorder, particularly Crohn's disease

INVENTOR: CHEN, J; CHENG, D ; FEBER, J N ; MEEGALLA, R ; NELSON, T C ; RAMAKER, M ; FEDER, J N

PRIORITY-DATA: 2003US-441567P (January 21, 2003), 2004US-0761905 (January 21, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
MX 2005007615 A1	October 1, 2005		000	C12N000/00000
WO 2004065551 A2	August 5, 2004	E	181	C12N000/00
US 20040223959 A1	November 11, 2004		000	C12Q001/68
AU 2004206250 A1	August 5, 2004		000	C12N009/10
EP 1585815 A2	October 19, 2005	E	000	C12N009/10

INT-CL (IPC): C07 H 21/04; C12 N 0/00; C12 N 0/00000; C12 N 9/10; C12 N 15/54; C12 Q 1/68

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Drawi Desc | Image

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Terms	Documents
monoacylglycerol acyltransferase-3	3

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Search Results - Record(s) 1 through 10 of 15 returned.

☐ 1. Document ID: US 20060134752 A1

L6: Entry 1 of 15 File: PGPB Jun 22, 2006

PGPUB-DOCUMENT-NUMBER: 20060134752
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060134752 A1

TITLE: Human diacylglycerol acyltransferase 2 (DGAT2) family members and uses therefor

PUBLICATION-DATE: June 22, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gimeno; Ruth E.	Wellesley	MA	US
Wu; Zhidan	Boston	MA	US
Kapeller-Libermann; Rosana	Chestnut Hill	MA	US
Hubbard; Brian K.	Beverly	MA	US

US-CL-CURRENT: 435/69.1; 435/193, 435/320.1, 435/325, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc | Image

☐ 2. Document ID: US 20060100146 A1

L6: Entry 2 of 15 File: PGPB May 11, 2006

PGPUB-DOCUMENT-NUMBER: 20060100146
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060100146 A1

TITLE: AWAT-related methods and articles

PUBLICATION-DATE: May 11, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Sturley; Stephen L.	New York	NY	US
Turkish; Aaron	New York	NY	US
Billheimer; Jeffrey T.	West Chester	PA	US
Cromley; Debra	Pittsgrove	NJ	US

US-CL-CURRENT: 514/12; 514/211.13, 514/356, 514/457, 514/460, 514/557, 514/571, 514/78

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 20050272680 A1

L6: Entry 3 of 15 File: PGPB Dec 8, 2005

PGPUB-DOCUMENT-NUMBER: 20050272680
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050272680 A1

TITLE: Modulation of diacylglycerol acyltransferase 2 expression

PUBLICATION-DATE: December 8, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bhanot, Sanjay	Carlsbad	CA	US
Dobie, Kenneth W.	Del Mar	CA	US
Yu, Xing-Xian	San Diego	CA	US
Monia, Brett P.	Encinitas	CA	US

US-CL-CURRENT: 514/44; 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 4. Document ID: US 20050106697 A1

L6: Entry 4 of 15 File: PGPB May 19, 2005

PGPUB-DOCUMENT-NUMBER: 20050106697
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050106697 A1

TITLE: Mono-and diacylglycerol acyltransferases and methods of use thereof

PUBLICATION-DATE: May 19, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Cases, Sylvaine	Belmont	CA	US
Stone, Scot J.	Fairfield	CA	US
Zhou, Ping	Walnut Creek	CA	US
Farese, Robert V. JR.	San Francisco	CA	US
Yen, Chi-Liang Eric	San Francisco	CA	US

US-CL-CURRENT: 435/193; 435/134, 435/320.1, 435/325, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

☐ 5. Document ID: US 20050043524 A1

L6: Entry 5 of 15 File: PGPB Feb 24, 2005

PGPUB-DOCUMENT-NUMBER: 20050043524
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050043524 A1

TITLE: Modulation of diacylglycerol acyltransferase 2 expression

PUBLICATION-DATE: February 24, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bhanot, Sanjay	Carlsbad	CA	US
Dobie, Kenneth W.	Del Mar	CA	US
Yu, Xing-Xian	San Diego	CA	US

US-CL-CURRENT: 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc | Image

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☐ 6. Document ID: US 20050019372 A1

L6: Entry 6 of 15 File: PGPB Jan 27, 2005

PGPUB-DOCUMENT-NUMBER: 20050019372
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050019372 A1

TITLE: Modified-fat nutritional products useful preventing or treating obesity

PUBLICATION-DATE: January 27, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Corkey, Barbara E.	Boston	MA	US
Guo, Wen	Stoneham	MA	US
Jianrong, Han	Stoneham	MA	US

US-CL-CURRENT: 424/439

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc | Image

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☐ 7. Document ID: US 20040223959 A1

L6: Entry 7 of 15 File: PGPB Nov 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040223959
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040223959 A1

TITLE: Polynucleotide encoding a novel acyl coenzyme a, monoacylglycerol acyltransferase-3 (MGAT3), and uses thereof

PUBLICATION-DATE: November 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Feder, John N.	Belle Mead	NJ	US
Nelson, Thomas C.	Lawrenceville	NJ	US
Chen, Jian	Princeton	NJ	US
Meegalla, Rupalie	Boothwyn	PA	US
Ramaker, Michael	Greenville	DE	US
Cheng, Dong	Furlong	PA	US

US-CL-CURRENT: 424/94.5; 435/193, 435/320.1, 435/325, 435/6, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 8. Document ID: US 20040209838 A1

L6: Entry 8 of 15 File: PGPB Oct 21, 2004

PGPUB-DOCUMENT-NUMBER: 20040209838
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040209838 A1

TITLE: Modulation of diacylglycerol acyltransferase 1 expression

PUBLICATION-DATE: October 21, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Monia, Brett P.	Encinitas	CA	US
Graham, Mark J.	San Clemente	CA	US

US-CL-CURRENT: 514/44; 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 9. Document ID: US 20040185559 A1

L6: Entry 9 of 15 File: PGPB Sep 23, 2004

PGPUB-DOCUMENT-NUMBER: 20040185559
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040185559 A1

TITLE: Modulation of diacylglycerol acyltransferase 1 expression

PUBLICATION-DATE: September 23, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Monia, Brett P.	Encinitas	CA	US

Graham, Mark J. San Clem CA US

US-CL-CURRENT: 435/375; 514/44, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 10. Document ID: US 20030170691 A1

L6: Entry 10 of 15 File: PGPB Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030170691
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030170691 A1

TITLE: Human diacylglycerol acyltransferase 2 (DGAT2) family members and uses therefor

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Gimeno, Ruth E.	Wellesley	MA	US
Wu, Zhidan	Boston	MA	US
Kapeller-Libermann, Rosana	Chestnut Hill	MA	US
Hubbard, Brian K.	Beverly	MA	US

US-CL-CURRENT: 435/6; 435/193, 435/320.1, 435/325, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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Terms	Documents
L3 and dna	15

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WEST Search History

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DATE: Friday, August 11, 2006

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☐	L6	L3 and dna	15
☐	L5	acyl coenzyme A monoacylglycerol acyltransferase-3	1
☐	L4	monoacylglycerol acyltransferase-3	3
☐	L3	monoacylglycerol acyltransferase	25
☐	L2	("wo 0157190")!.ABPN1,NRPN,PN,WKU.	0
☐	L1	("wo1057190")!.ABPN1,NRPN,PN,WKU.	0

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=> s human diacylglycerol acyltransferase
L1          26 HUMAN DIACYLGLYCEROL ACYLTRANSFERASE

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2          19 DUP REM L1 (7 DUPLICATES REMOVED)

=> s human diacylglycerol acyltransferase-3
L3           0 HUMAN DIACYLGLYCEROL ACYLTRANSFERASE-3

=> s human diacylglycerol acyltransferase-2
L4           4 HUMAN DIACYLGLYCEROL ACYLTRANSFERASE-2

=> s human diacylglycerol acyltransferase-1
L5           8 HUMAN DIACYLGLYCEROL ACYLTRANSFERASE-1

=> s l2 and 1990-2003/py
L6          12 L2 AND 1990-2003/PY

=> focus l6
PROCESSING COMPLETED FOR L6
L7          12 FOCUS L6 1-

=> d l7 1-12 ibib ab

L7   ANSWER 1 OF 12  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2000:547416  HCAPLUS
DOCUMENT NUMBER:          133:161281
TITLE:                    Cloning, sequence, expression and possible therapeutic
                          applications of human diacylglycerol
                          acyltransferase and acyl-CoA cholesterol
                          acyltransferase isoenzyme
INVENTOR(S):              Sturley, Stephen L.; Oelkers, Peter
PATENT ASSIGNEE(S):       The Trustees of Columbia University In the City of New
                          York, USA
SOURCE:                   U.S., 32 pp.
                          CODEN: USXXAM
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
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US 6100077 A 20000808 US 1998-165042 19981001 <--
PRIORITY APPLN. INFO.: US 1998-165042 19981001
AB This study is a description of the isolation of full-length human cDNA clones for two ACAT (ACAT = acyl-CoA cholesterol acyltransferase) related gene products (ARGP1 and ARGP2) (ARGP = ACAT Related Gene Products), examn. of their pattern of tissue expression, and assays of enzymic activity. It is shown that ARGP2 can catalyze the formation of sterol ester from cholesterol and oleoyl-CoA, leading the authors to rename this gene, ACAT2. Therefore, the gene ACAT2 encodes an ACAT isoenzyme. By contrast, ARGP1 did not detectably esterify cholesterol and the authors propose that it performs acyl-CoA dependent acylation of other mols., such as diacylglycerol. The authors' observations of a diacylglycerol-binding site in ARGP1 biases one to the possibility of ARGP1 being diacylglycerol acyltransferase (DGAT), which to date has not been isolated at the mol. level. This invention also provides a possible in vitro method of detecting a diacylglycerol acyltransferase binding site of an enzyme. This invention provides a possible method for detg. whether a subject known to have an imbalance in triglyceride has the imbalance due to a defect in esterification of diacylglycerol to produce triglyceride. This invention also provides a possible method for treating a subject who has an imbalance in triglyceride levels due to a defect in esterification of diacylglycerol which comprises introducing the isolated nucleic acid which encodes a diacylglycerol acyltransferase (DGAT) into the subject under conditions such that the nucleic acid expresses a wild-type diacylglycerol acyltransferase, so as to thereby treat the subject. This invention further provides a possible method for inhibiting wild-type diacylglycerol acyltransferase in a subject which comprises transforming appropriate cells from the subject with a vector which expresses the nucleic acid which encodes a diacylglycerol acyltransferase (DGAT).
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 12 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2000:14226 BIOSIS
DOCUMENT NUMBER: PREV200000014226
TITLE: Overexpression of human diacylglycerol acyltransferase results in increased triacylglycerol synthesis and increased secretion of apolipoprotein B-containing lipoproteins from McA-RH777 cells.
AUTHOR(S): Liang, Jun-shan [Reprint author]; Oelkers, Peter M. [Reprint author]; Chu, Pi-Chun [Reprint author]; Ginsberg, Henry N. [Reprint author]; Sturley, Stephen L. [Reprint author]
CORPORATE SOURCE: Columbia Univ, New York, NY, USA
SOURCE: Circulation, (Nov. 2, 1999) Vol. 100, No. 18 SUPPL., pp. I.686. print.
Meeting Info.: 72nd Scientific Sessions of the American Heart Association. Atlanta, Georgia, USA. November 7-10, 1999.
CODEN: CIRCAZ. ISSN: 0009-7322.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 29 Dec 1999
Last Updated on STN: 31 Dec 2001

L7 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:969479 HCAPLUS
DOCUMENT NUMBER: 138:382754
TITLE: Posttranscriptional Control of the Expression and Function of Diacylglycerol Acyltransferase-1 in Mouse Adipocytes
AUTHOR(S): Yu, Yi-Hao; Zhang, Yiying; Oelkers, Peter; Sturley, Stephen L.; Rader, Daniel J.; Ginsberg, Henry N.

CORPORATE SOURCE: Department of Medicine, Columbia University College of Physicians and Surgeons, New York, NY, 10032, USA
SOURCE: Journal of Biological Chemistry (2002), 277(52), 50876-50884
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Acyl-CoA:diacylglycerol acyltransferase-1 (DGAT1) catalyzes the final step of triglyceride synthesis in mammalian cells. Data obtained from DGAT1-knockout mice have indicated that this enzyme plays an important role in energy homeostasis. We investigated the regulation of the expression and function of DGAT1 in mouse 3T3-L1 cell as a model for mammalian adipocytes. We demonstrated that the DGAT1 protein level increased by ~90-fold following differentiation of 3T3-L1 into mature adipocytes, a change that was accompanied by ~7-fold increase in DGAT1 mRNA. On the other hand, forced overexpression of DGAT1 mRNA by >20-fold via a recombinant adenovirus only resulted in ~2-fold increase in DGAT1 protein in mature adipocytes and little increase in preadipocytes. These results indicated that gene expression of DGAT1 in adipocytes is subjected to rigorous posttranscriptional regulation, which is modulated significantly by the differentiation status of 3T3-L1 cells. Protein stability is not a significant factor in the control of DGAT1 expression. The steady-state levels of DGAT1 were unaffected by blockage of proteolytic pathways by ALLN. However, translational control was suggested by sequence anal. of the 5'-untranslated region of human DGAT1 (hDGAT1) mRNA. We found that the level of DGAT1 activity was predominantly a function of the steady-state level of DGAT1 protein. No significant functional changes were obsd. when the conserved tyrosine phosphorylation site in hDGAT1 was mutated by a single base pair substitution. Despite only a ~2-fold increase in DGAT1 protein caused by recombinant viral transduction, a proportionate increase in cellular triglyceride synthesis resulted without affecting the triglyceride lipolysis rate, leading to >2-fold increase in intracellular triglyceride accumulation. No change in adipocyte morphol. or in the expression levels of lipoprotein lipase, peroxisomal proliferation-activating receptor-.gamma., and aP2 was evident secondary to DGAT1 overexpression at different stages in 3T3-L1 differentiation. These data suggest that dysregulation of DGAT1 may play a role in the development of obesity, and manipulation of the steady-state level of DGAT1 protein may offer a potential means to treat or prevent obesity.

REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 12 MEDLINE on STN
ACCESSION NUMBER: 2003471990 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12824082
TITLE: Human intestinal monoacylglycerol acyltransferase: differential features in tissue expression and activity.
AUTHOR: Lockwood John F; Cao Jingsong; Burn Paul; Shi Yuguang
CORPORATE SOURCE: Endocrine Research, DC 0545, Lilly Research Laboratories, Lilly Corporate Center, Eli Lilly and Company, Indianapolis, IN 46285, USA.
SOURCE: American journal of physiology. Endocrinology and metabolism, (2003 Nov) Vol. 285, No. 5, pp. E927-37. Electronic Publication: 2003-06-24.
Journal code: 100901226. ISSN: 0193-1849.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200311
ENTRY DATE: Entered STN: 10 Oct 2003
Last Updated on STN: 19 Dec 2003

Entered Medline: 20 Nov 2003

AB Acyl CoA-monoacylglycerol acyltransferase (MGAT) catalyzes the first step in triacyglycerol resynthesis involved in dietary absorption in enterocytes. Despite its potentially important role in dietary fat absorption, a gene encoding a human intestinal MGAT has not been identified. In this study, we report the identification and functional characterization of a human intestinal MGAT (hMGAT2) and its splice variant (hMGAT2V). The hMGAT2 gene encodes a peptide of 334 amino acids with a molecular mass of 38.2 kDa that shares 81 and 47% amino acid identities with the mouse MGAT2 and the human diacylglycerol acyltransferase (DGAT2) enzymes, respectively. The hMGAT2 gene is localized on chromosome 11q13.5, adjacent to the DGAT2 gene, suggesting gene duplication. Transient expression of hMGAT2, but not an alternatively spliced variant, hMGAT2V, in COS-7 cells led to a ninefold increase in the synthesis of DAG. The human and mouse differ significantly in tissue distribution of MGAT2.In addition to a predominant expression in the small intestine in both species, distinct levels were also found in the human liver, contrasting with higher levels in the mouse kidney. In comparison with a single 1.8-kb transcript in mouse, the hMGAT2 gene expressed two transcripts of 3.0 and 6.0 kb in size that encode MGAT2 and an inactive peptide with unknown functions, respectively. Despite a significant level of hMGAT2 mRNA in the human liver, little MGAT activity was detected in liver microsomes when tested against monoacyglcerols with different unsaturated side chains, suggesting possible posttranscriptional regulation.

L7 ANSWER 5 OF 12 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2003425974 EMBASE
TITLE: Human intestinal monoacylglycerol acyltransferase: Differential features in tissue expression and activity.
AUTHOR: Lockwood J.F.; Cao J.; Burn P.; Shi Y.
CORPORATE SOURCE: Y. Shi, Lilly Research Laboratories, Lilly Corporate Center, Eli Lilly and Company, Indianapolis, IN 46285, United States. shi_yuguang@lilly.com
SOURCE: American Journal of Physiology - Endocrinology and Metabolism, (2003) Vol. 285, No. 5 48-5, pp. E927-E937. . Refs: 33
ISSN: 0193-1849 CODEN: AJPMD
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 002 Physiology
029 Clinical Biochemistry
048 Gastroenterology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 6 Nov 2003
Last Updated on STN: 6 Nov 2003

AB Acyl CoA-monoacylglycerol acyltransferase (MGAT) catalyzes the first step in triacyglycerol resynthesis involved in dietary absorption in enterocytes. Despite its potentially important role in dietary fat absorption, a gene encoding a human intestinal MGAT has not been identified. In this study, we report the identification and functional characterization of a human intestinal MGAT (hMGAT2) and its splice variant (hMGAT2V). The hMGAT2 gene encodes a peptide of 334 amino acids with a molecular mass of 38.2 kDa that shares 81 and 47% amino acid identities with the mouse MGAT2 and the human diacylglycerol acyltransferase (DGAT2) enzymes, respectively. The hMGAT2 gene is localized on chromosome 11q13.5, adjacent to the DGAT2 gene, suggesting gene duplication. Transient expression of hMGAT2, but not an alternatively spliced variant, hMGAT2V, in COS-7 cells led to a ninefold increase in the synthesis of DAG. The human and mouse differ significantly in tissue distribution of MGAT2. In addition to a predominant expression in the small intestine in both species, distinct levels were also found in the human liver, contrasting

with higher levels in the mouse kidney. In comparison with a single 1.8-kb transcript in mouse, the hMGAT2 gene expressed two transcripts of 3.0 and 6.0 kb in size that encode MGAT2 and an inactive peptide with unknown functions, respectively. Despite a significant level of hMGAT2 mRNA in the human liver, little MGAT activity was detected in liver microsomes when tested against monoacyglcerols with different unsaturated side chains, suggesting possible posttranscriptional regulation.

L7 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:633349 HCAPLUS
DOCUMENT NUMBER: 139:173811
TITLE: Methods and compositions for modulating diacylglycerol acyltransferase activity to modulate sensitivity to insulin and leptin and modulate carbohydrate metabolism
INVENTOR(S): Farese, Robert V.; Chen, Hubert C.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 29 pp., Cont.-in-part of U.S. Ser. No. 40,315.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003154504	A1	20030814	US 2002-289172	20021105 <--
US 6344548	B1	20020205	US 1998-103754	19980624 <--
WO 9967403	A1	19991229	WO 1998-US17883	19980828 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2003167483	A1	20030904	US 2001-40315	20011029 <--

PRIORITY APPLN. INFO.:		
US 1998-103754	A2	19980624
WO 1998-US17883	A2	19980828
US 1998-107771P	P	19981109
US 1999-339472	B2	19990623
US 2001-40315	A2	20011029

AB Methods and compns. for modulating carbohydrate metab. in a host are provided. In the subject methods, diacylglycerol acyltransferase (DGAT) activity (specifically DGAT1 activity) is modulated, e.g., reduced or enhanced, to achieve a desired insulin and/or leptin sensitivity, thereby modulating carbohydrate metab., e.g., increasing or decreasing blood glucose levels, glucose uptake into cells and assimilation into glycogen. Also provided are pharmaceutical compns. for practicing the subject methods. The subject methods and compns. find use in a variety of applications, including the treatment of hosts suffering conditions assocd. with abnormal carbohydrate metab., such as obesity or diabetes.

L7 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:511096 HCAPLUS
DOCUMENT NUMBER: 139:81326
TITLE: Human and mouse diacylglycerol acyltransferase 2 sequence homologs, their sequences, recombinant production, and use as modulators in treatment of disorders such as obesity
INVENTOR(S): Gimeno, Ruth E.; Wu, Zhidan; Kapeller-Libermann, Rosana; Hubbard, Brian K.
PATENT ASSIGNEE(S): Millennium Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 154 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003053363	A2	20030703	WO 2002-US40974	20021219 <--
WO 2003053363	A3	20040429		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002366803	A1	20030709	AU 2002-366803	20021219 <--
US 2003170691	A1	20030911	US 2002-324618	20021219 <--
EP 1455815	A2	20040915	EP 2002-805653	20021219
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
US 2006134752	A1	20060622	US 2006-347870	20060206

PRIORITY APPLN. INFO.:

US 2001-341947P	P	20011219
US 2002-411859P	P	20020919
US 2002-324618	B1	20021219
WO 2002-US40974	W	20021219

AB The invention provides various cDNA mols. encoding human and mouse diacylglycerol acyltransferase 2 (DGAT2) sequence homologs. The human cDNA mols. are designated 60489, 112041, 112037, 58765, 58765short, 112023, 112024 and hDC2, while the mouse cDNA mols. are designated m86606, m5875, m112023, and mDC2. The invention also provides a vector contg. said cDNA mols., and a host cell transformed with said vector for recombinant DGAT2 sequence homolog protein prodn. The invention further provides said DGAT2 sequence homolog polypeptides, and antibodies, and/or fusion proteins thereof. Still further, the invention provides a method for: (a) identifying a compd. capable of modulating an adipocyte activity using said DGAT2 family member cDNA mols. or polypeptides, and use of identified modulator; (b) detg. acyltransferase activity of a polypeptide (such as DGAT2 sequence homologs) utilizing labeled substrates; and (c) identifying a compd. (modulator) capable of treating a disorder characterized by aberrant DGAT2 family member nucleic acid expression or activity (such as obesity), wherein said modulator is org. small mol., and anti-DGAT2 antibody, or one of the disclosed DGAT2 sequence homolog polypeptides. Finally, the invention provides the cDNA and amino acid sequences of said human and mouse DGAT2 sequence homologs. The invention discussed that the DGAT2 sequence homologs can be used in screening assays, and as therapeutic agents for controlling one or more disorders assocd. with adipocyte differentiation and metab., and metabolic disorders. The invention is based, at least in part, on the discovery that the DGAT2 sequence homolog cDNAs and polypeptides were expressed at high levels in adipose, liver and small intestine, colon, and kidney, and were regulated during conditions which affect differentiation and metab. of adipocytes, and are downregulated in genetic animal models of obesity.

L7 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:473332 HCAPLUS
DOCUMENT NUMBER: 139:49111
TITLE: Diacylglycerol acyltransferase proteins and genes from Mortierella ramanniana and other organisms
INVENTOR(S): Lardizabal, Kathryn Dennis; Thompson, Gregory A.;

Hawkins, Deborah
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 107 pp., Cont.-in-part of U.S. Ser. No. 121,857.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003115632	A1	20030619	US 2002-208018	20020731 <--
US 2003028923	A1	20030206	US 2002-121857	20020415 <--
US 6822141	B2	20041123		

PRIORITY APPLN. INFO.:
US 1998-91631P P 19980702
US 1999-130829P P 19990423
US 1999-345461 B1 19990630
US 2002-121857 A2 20020415

AB The invention provides diacylglycerol acyltransferase (DAGAT) proteins, wherein said proteins are active in the formation of triacylglycerol from fatty acyl and diacylglycerol substrates. In one aspect, Mortierella ramanniana DAGAT proteins were isolated and have mol. wts. of between approx. 36 and 37 kDa as measured by SDS-PAGE. The invention also provides novel DAGAT polynucleotide and polypeptide sequences and to methods of producing such polypeptides using recombinant techniques. In addn., methods are provided for using such sequences to alter triacylglycerol levels in plants and to treat diseases assocd. with altered DAGAT activity or expression.

L7 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:994978 HCAPLUS
DOCUMENT NUMBER: 140:91712
TITLE: Overexpression of Diacylglycerol Acyltransferase-1 Reduces Phospholipid Synthesis, Proliferation, and Invasiveness in Simian Virus 40-transformed Human Lung Fibroblasts
AUTHOR(S): Bagnato, Carolina; Igal, R. Ariel
CORPORATE SOURCE: Facultad de Ciencias Medicas, CONICET-UNLP, Instituto de Investigaciones Bioquimicas de La Plata (INIBIOLP), Universidad Nacional de La Plata, La Plata, 1900, Argent.
SOURCE: Journal of Biological Chemistry (2003), 278(52), 52203-52211
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Diacylglycerol (DAG) is a versatile mol. that participates as substrate in the synthesis of structural and energetic lipids, and acts as the physiol. signal that activates protein kinase C. Diacylglycerol acyltransferase (DGAT), the last committed enzyme in triacylglycerol synthesis, could potentially regulate the content and use of both signaling and glycerolipid substrate DAG by converting it into triacylglycerol. To test this hypothesis, we stably overexpressed the DGAT1 mouse gene in human lung SV40-transformed fibroblasts (DGAT cells), which contains high levels of DAG. DGAT cells exhibited a 3.9-fold higher DGAT activity and a 3.2-fold increase in triacylglycerol content, whereas DAG and phosphatidylcholine decreased by 70 and 20%, resp., compared with empty vector-transfected SV40 cells (Control cells). Both acylation and de novo synthesis of phosphatidylcholine, phosphatidylethanolamine, and sphingomyelin were reduced by 30-40% in DGAT cells compared with controls, suggesting that DGAT used substrates for triacylglycerol synthesis that had originally been destined to produce phospholipids. The incorporation

of [14C]DAG and [14C]fatty acids released from plasma membrane by addns. of either phospholipase C or phospholipase A2 into triacylglycerol was increased by 6.2- and 2.8-fold, resp., in DGAT cells compared with control cells, indicating that DGAT can attenuate signaling lipids. Finally, DGAT overexpression reversed the neoplastic phenotype because it dramatically reduced the cell growth rate and suppressed the anchorage-independent growth of the SV40 cells. These results strongly support the view that DGAT participates in the regulation of membrane lipid synthesis and lipid signaling, thereby playing an important role in modulating cell growth properties.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:880139 HCAPLUS
DOCUMENT NUMBER: 136:50250
TITLE: Human acyl-CoA:diacylglycerol acyltransferase is a tetrameric protein
AUTHOR(S): Cheng, Dong; Meegalla, Rupalie L.; He, Bokang; Cromley, Debra A.; Billheimer, Jeffery T.; Young, Peter R.
CORPORATE SOURCE: Department of Metabolic Diseases, Experimental Station, DuPont Pharmaceuticals Company, Wilmington, DE, 19880-0400, USA
SOURCE: Biochemical Journal (2001), 359(3), 707-714
CODEN: BIJOAK; ISSN: 0264-6021
PUBLISHER: Portland Press Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Diacylglycerol acyltransferase (DGAT) is an integral membrane enzyme that catalyzes the last step of triacylglycerol synthesis from diacylglycerol and acyl-CoA. Here, the authors provide exptl. evidence that DGAT is a homotetramer. Although the predicted mol. wt. of human DGAT protein is 55 kDa, CHAPS-solubilized recombinant human DGAT was eluted in fractions of >150 kDa on gel-filtration chromatog. Crosslinking of recombinant DGAT in membranes with disuccinimidyl suberate yielded bands corresponding to the dimer (108 kDa) and the tetramer (214 kDa) in SDS-PAGE. Finally, when 2 differently epitope-tagged forms of DGAT were co-transfected into mammalian cells, they could be co-immunopptd. From a human adipose tissue cDNA library, the authors cloned a cDNA encoding a novel splice variant of DGAT (designated DGATsv) that contained a 77-nt insert of unspliced intron with an in-frame stop codon. This resulted in a truncated form of DGAT that terminated at Arg-387, deleting 101 residues from the C-terminus contg. the putative active site. DGATsv was enzymically inactive when transfected in HEK-293E cells, but was still able to form dimers and tetramers on crosslinking, indicating that the ability to form tetramers resides in the N-terminal region. When co-expressed in HEK-293E cells, DGATsv did not inhibit the activity of full-length DGAT, suggesting that the subunits of DGAT catalyze triacylglycerol synthesis independently.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 12 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 2004:2191 BIOSIS
DOCUMENT NUMBER: PREV200400005234
TITLE: A novel diacylglycerol acyltransferase (DGAT2) is decreased in human psoriatic skin and increased in diabetic mice.
AUTHOR(S): Wakimoto, Koji [Reprint Author]; Chiba, Hiroaki; Michibata, Hideo; Seishima, Mariko; Kawasaki, Satoshi; Okubo, Kousaku; Mitsui, Hiroshi; Torii, Hideshi; Imai, Yuji
CORPORATE SOURCE: Discovery Research Laboratory, Advanced Medical Research Department, Tanabe Seiyaku Co., Ltd, 3-16-89 Kashima, Yodogawa-ku, Osaka, 532-8505, Japan
wakimoto@tanabe.co.jp

SOURCE: Biochemical and Biophysical Research Communications, (October 17 2003) Vol. 310, No. 2, pp. 296-302. print.
CODEN: BBRCA9. ISSN: 0006-291X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 17 Dec 2003
Last Updated on STN: 17 Dec 2003

AB Psoriasis is a skin disease with epidermal keratinocyte hyperproliferation and altered differentiation. To identify novel psoriasis-related genes, we investigated differentially expressed genes between normal and psoriatic skin. We identified a novel acyl CoA:diacylglycerol acyltransferase 2 (DGAT2) gene, which was decreased in human psoriatic skin. DGAT2 mRNA was expressed in sebaceous glands of normal human skin. DGAT2 protein was detected on endoplasmic reticulum. DGAT2 catalyzes the final step in the production of triglycerides and the accumulation of triglycerides in the tissues is considered to be related to insulin resistance. Therefore, we also investigated the expression of the DGAT2 gene in diabetic mice. DGAT2 mRNA was increased in the adipose, small intestine, and skeletal muscle in diabetic mice.

L7 ANSWER 12 OF 12 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:500394 BIOSIS
DOCUMENT NUMBER: PREV200200500394
TITLE: DGAT1 promoter polymorphism associated with alterations in body mass index, high density lipoprotein levels and blood pressure in Turkish women.
AUTHOR(S): Ludwig, E. H. [Reprint author]; Mahley, R. W.; Palaoglu, E.; Ozbayrakci, S.; Balestra, M. E.; Borecki, I. B.; Innerarity, T. L.; Farese, R. V., Jr.
CORPORATE SOURCE: Xenon Genetics, 3650 Gilmore Way, Burnaby, BC, V5G 4W8, Canada
eludwig@xenongenetics.com
SOURCE: Clinical Genetics, (July, 2002) Vol. 62, No. 1, pp. 68-73. print.
CODEN: CLGNAY. ISSN: 0009-9163.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 25 Sep 2002
Last Updated on STN: 25 Sep 2002

AB Triglyceride synthesis is catalyzed by acyl CoA:diacylglycerol acyltransferases (DGAT), microsomal enzymes that use diacylglycerol and fatty acyl CoAs as substrates. Because DGAT1 expression is upregulated during adipocyte differentiation and DGAT1 deficiency is associated with leanness in mice, we hypothesized that alterations in DGAT1 expression may affect human body weight. We identified five polymorphisms in the human DGAT1 promoter and 5' non-coding sequence in a random Turkish population. Functional analysis of one common variant, C79T, revealed reduced promoter activity for the 79T allele in cultured cell lines. In 476 Turkish women, the 79T allele was associated with lower body mass index (BMI) ($p = 0.004$), conferring an odds ratio of 2.0 (95% CI = 1.30-3.07, $p = 0.0001$) for BMI ltoreq 20. Interestingly, after controlling for the influence of BMI, the 79T allele was also associated with higher plasma HDL cholesterol levels ($p = 0.0006$) and lower diastolic blood pressure ($p = 0.019$) in these women. No association was found in Turkish men ($n = 846$). Our findings suggest that genetic variation at the DGAT1 locus may influence BMI and other metabolic parameters associated with cardiovascular risk in selected human populations.

=> d his

(FILE 'HOME' ENTERED AT 10:53:14 ON 11 AUG 2006)

FILE 'MEDLINE, HCAPLUS, BIOSIS, BIOTECHDS, EMBASE' ENTERED AT 10:53:50 ON 11 AUG 2006

L1 26 S HUMAN DIACYLGLYCEROL ACYLTRANSFERASE
L2 19 DUP REM L1 (7 DUPLICATES REMOVED)
L3 0 S HUMAN DIACYLGLYCEROL ACYLTRANSFERASE-3
L4 4 S HUMAN DIACYLGLYCEROL ACYLTRANSFERASE-2
L5 8 S HUMAN DIACYLGLYCEROL ACYLTRANSFERASE-1
L6 12 S L2 AND 1990-2003/PY
L7 12 FOCUS L6 1-

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	39.07	39.28

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-5.25	-5.25

STN INTERNATIONAL LOGOFF AT 10:57:48 ON 11 AUG 2006

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FILE 'MEDLINE' ENTERED AT 11:00:34 ON 11 AUG 2006

FILE 'HCAPLUS' ENTERED AT 11:00:34 ON 11 AUG 2006
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FILE 'SCISEARCH' ENTERED AT 11:00:34 ON 11 AUG 2006
Copyright (c) 2006 The Thomson Corporation

=> s monoacylglycerol acyl transferase
L1            1 MONOACYLGLYCEROL ACYL TRANSFERASE

=> d l1

L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2006 ACS on STN
AN   1991:581986  HCAPLUS  Full-text
DN   115:181986
TI   Modulation of lipid chylomicron-synthesizing enzymes in rats by the
     dietary (n-6):(n-3) fatty acid ratio
AU   Chautan, Magali; Charbonnier, Monique; Leonardi, Jeannie; Andre, Marc;
     Lafont, Huguette; Nalbone, Gilles
CS   Inst. Natl. Sante Rech. Med., Marseille, 13009, Fr.
SO   Journal of Nutrition (1991), 121(9), 1305-10
     CODEN: JONUAI; ISSN: 0022-3166
DT   Journal
LA   English


=> s monoacylglycerol acyltransferase
L2          427 MONOACYLGLYCEROL ACYLTRANSFERASE

=> dup rem l2
PROCESSING COMPLETED FOR L2
L3           175 DUP REM L2 (252 DUPLICATES REMOVED)

=> s human monoacylglycerol acyltransferase
L4            2 HUMAN MONOACYLGLYCEROL ACYLTRANSFERASE

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5             2 DUP REM L4 (0 DUPLICATES REMOVED)

=> d l5 1-2 ibib ab

L5   ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:289274  HCAPLUS  Full-text
DOCUMENT NUMBER:          140:316224
TITLE:                    cDNA and protein sequences of animal monoacylglycerol
                          acyltransferases and the use of the enzyme for
                          screening inhibitors for repression of fat
```

accumulation

INVENTOR(S): Hiramine, Yasushi; Takasuga, Shunsuke; Murakami, Hiroko

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 88 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2004105165	A2	20040408	JP 2003-71639		20030317
PRIORITY APPLN. INFO.:			JP 2002-80623	A	20020322
			JP 2002-213645	A	20020723

AB This invention provides cDNA and protein sequences of monoacylglycerol acyltransferases from mouse, rat and human. An inhibitor of the enzyme, N-[2-(4-benzyl-2-ethylphenoxy)ethyl]-5,6-dimethyl[1,2,4]triazolo[1,5- a]pyrimidine-7-amine, repressed the fat accumulation in animal fat tissues. The invention also provided tissue distribution of monoacylglycerol acyltransferases gene. The enzymes provided in this invention can be used for screening drugs for obesity.

L5 ANSWER 2 OF 2 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2004-15404 BIOTECHDS Full-text

TITLE: New mammalian monoacylglycerol acyltransferase 2 polypeptide, useful for treating cardiovascular disease, hyperlipidemia, obesity, diabetes, cancer, neurological disorders and immunological disorders;
recombinant enzyme protein production and antibody for use in gene therapy

AUTHOR: CASES S; STONE S J; ZHOU P; FARESE R V; YEN C E

PATENT ASSIGNEE: GLADSTONE INST J DAVID

PATENT INFO: WO 2004042014 21 May 2004

APPLICATION INFO: WO 2003-US34598 29 Oct 2003

PRIORITY INFO: US 2002-286581 31 Oct 2002; US 2002-286581 31 Oct 2002

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2004-400668 [37]

AB DERWENT ABSTRACT:
NOVELTY - A mammalian monoacylglycerol acyltransferase 2 (MGAT2) polypeptide (I) present in other than its naturally occurring environment, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following: (1) a mammalian polynucleotide (II) present in other than its natural environment encoding a polypeptide that exhibits monoacyl glycerol and/or diacyl glycerol transferase activity, and comprising a nucleotide sequence that has at least 50% identity to a sequence of 1728, 1005 and 1778 nucleotides fully defined in the specification; (2) an expression cassette (III) comprising a transcriptional initiation region functional in an expression host, (II) under the transcriptional regulation of the transcriptional initiation region, and transcriptional termination region functional in the expression host; (3) a cell (IV) comprising (III) as a part of an extrachromosomal element or integrated into the genome of a host cell as a result of introducing (III) into the host cell; (4) cellular progeny (V) of (IV); (5) preparing (I); (6) monoclonal antibody (VI) binding specifically to (I); (7) inhibiting (M1) the activity of (I), involves contacting (I) with an agent that inhibits acyl transferase activity of the protein; and(8) identifying an agent that inhibits an acyltransferase activity of MAGT2 polypeptide,

involves contacting MGAT2 polypeptide with a test agent in the presence of magnesium ions, fatty acyl CoA and acyl acceptor, and determining the effect of the test agent on the production of acylated acceptor. BIOTECHNOLOGY - Preparation: Preparation of (I) involves growing (IV), where the polypeptide is expressed and isolating (I) substantially free of other proteins (claimed). Preferred Polypeptide: (I) has an amino acid sequence that is substantially the same or identical to a sequence of 334 or 284 amino acids fully defined in the specification. (I) is substantially pure. Preferred Polynucleotide: (II) encodes (I). Preferred Antibody: (VI) inhibits MGAT activity of MGAT2 polypeptide. (VI) is a humanized antibody. Preferred Method: In (M1), the agent is a small molecule, antibody (monoclonal antibody). ACTIVITY - Cardiovascular-Gen.; Anorectic; Antilipemic; Antidiabetic; Cytostatic; Neuroprotective. No supporting data is given. MECHANISM OF ACTION - Modulator of DGAT2alpha, MGAT1 or MGAT2 activity. USE - (I) is useful for producing in vitro models of diglyceride and/or triglyceride synthesis, and for producing triglyceride compositions which find use in foodstuffs, spreads, cooking materials, feedstocks and in industries for producing chemicals, lubricants and surfactants. (I) and (VI) are useful for treating disease conditions associated with acylglycerol metabolism, particularly associated with diacylglycerol O-acyltransferase 2alpha (DGAT2alpha), MGAT1 or MGAT2 activity. The disease conditions include cardiovascular disease, hyperlipidemia, obesity, diabetes, cancer, neurological disorders and immunological disorders. (II) is useful in gene therapy to treat disorders associated with DGAT2alpha, MGAT1 or MGAT2 defects, as probes and primers in hybridization applications (e.g., PCR), for identifying expression patterns in biological specimens, for preparing cell or animal models for DGAT2alpha, MGAT1 or MGAT2 function, for preparing in vitro models for (DGAT2alpha), MGAT1 or MGAT2 function, to generate transgenic host.
ADMINISTRATION - Administration of (I) or the agents is orally, rectally, parenterally, intradermally, transdermally or intraperitoneally. No dosage given. EXAMPLE - Human monoacylglycerol acyltransferase 2 (MGAT2) and mouse MGAT2 sequences were deduced from genomic sequences of sequencing databases. The cDNA sequence of short form of human MGAT2 (hMGAT2(trunc), accession no.NM025098) was identified by BLAST database searches. Primers were designed to amplify the coding sequence of human MGAT2, human MGAT2(trunc) and mouse MGAT2 from human intestine and stomach cDNA, and mouse intestinal cDNA by PCR. The human MGAT2 cDNA sequence had a sequence of 1005 nucleotides fully defined in the specification, and the mouse MGAT2 cDNA sequence had a sequence of 1728 nucleotides fully defined in the specification, and the corresponding amino acid sequence for human MGAT2 and mouse MGAT2 is 334 amino acids fully defined in the specification. (98 pages)

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=> s (MGAT3 or MGAT2 OR MGAT)
L6          450 (MGAT3 OR MGAT2 OR MGAT)

=> s (MGAT3 or MGAT2 )
L7          229 (MGAT3 OR MGAT2 )

=> s MGAT3
L8           98 MGAT3

=> DUP REM L8
PROCESSING COMPLETED FOR L8
L9            35 DUP REM L8 (63 DUPLICATES REMOVED)

=> s l9 and dna
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L10 5 L9 AND DNA

=> d l10 1-5 ibib ab

L10 ANSWER 1 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2004617118 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 15329358
TITLE: Molecular analysis of three gain-of-function CHO mutants that add the bisecting GlcNAc to N-glycans.
AUTHOR: Stanley Pamela; Sundaram Subha; Tang Jian; Shi Shaolin
CORPORATE SOURCE: Department of Cell Biology, Albert Einstein. stanley@aecom.yu.edu
CONTRACT NUMBER: P01 13330
SOURCE: Glycobiology, (2005 Jan) Vol. 15, No. 1, pp. 43-53. Electronic Publication: 2004-08-25. Journal code: 9104124. ISSN: 0959-6658.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AY598727; GENBANK-AY598728; GENBANK-AY598729; GENBANK-AY598730
ENTRY MONTH: 200505
ENTRY DATE: Entered STN: 20 Dec 2004
Last Updated on STN: 17 May 2005
Entered Medline: 16 May 2005

AB LEC10 Chinese hamster ovary (CHO) cells are gain-of-function mutants that express N-acetylglucosaminyltransferase III (GlcNAc-TIII), the glycosyltransferase that adds the bisecting GlcNAc to complex N-glycans. LEC10 cells are useful for glycosylation engineering of recombinant glycoproteins, including antibody therapeutics, for defining lectin recognition specificities and for determining biological functions of the bisecting GlcNAc. We show that three CHO mutants, LEC10, LEC10A, and LEC10B, arose due to transcriptional activation of the quiescent CHO Mgat3 gene. They each express Mgat3 gene transcripts of approximately 4.7 kb at different levels (LEC10B > LEC10 > LEC10A). Southern analyses gave a single band in LEC10, LEC10A, and parent CHO DNA with four restriction enzymes but an additional band with three of them in LEC10B genomic DNA, indicative of a duplication event in LEC10B. The deduced amino acid sequence of the Mgat3 gene expressed in each CHO mutant and in parent CHO genomic DNA is identical. However, 5' UTR sequences differ with LEC10 and LEC10B containing a 5' UTR segment of the Atf4 gene downstream of the Mgat3 gene in human and mouse. Somatic cell hybrid analysis indicated that the LEC10B Mgat3 gene was induced by a cis mechanism. LEC10B glycoproteins bound more erythroagglutinin lectin (E-PHA) than LEC10 glycoproteins and MALDI-TOF MS revealed a broad spectrum of complex, bisected N-glycans expressed by the LEC10B mutant. LEC10B is therefore the cell line of choice for producing recombinant glycoproteins carrying bisected N-glycans and for investigating biological functions of the bisecting GlcNAc.

L10 ANSWER 2 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2003173829 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12618427
TITLE: Identification of acyl coenzyme A:monoacylglycerol acyltransferase 3, an intestinal specific enzyme implicated in dietary fat absorption.
AUTHOR: Cheng Dong; Nelson Thomas C; Chen Jian; Walker Stephen G; Wardwell-Swanson Judith; Meegalla Rupalie; Taub Rebecca; Billheimer Jeffrey T; Ramaker Michael; Feder John N
CORPORATE SOURCE: Pharmaceutical Research Institute, Bristol-Myers Squibb

Company, Princeton, New Jersey 08543, USA.
SOURCE: The Journal of biological chemistry, (2003 Apr 18) Vol. 278, No. 16, pp. 13611-4. Electronic Publication: 2003-03-03.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AY229854
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 16 Apr 2003
Last Updated on STN: 23 May 2003
Entered Medline: 22 May 2003

AB Acyl coenzyme A:monoacylglycerol acyltransferase (MGAT) catalyzes the synthesis of diacylglycerol using 2-monoacylglycerol and fatty acyl coenzyme A. This enzymatic reaction is believed to be an essential and rate-limiting step for the absorption of fat in the small intestine. Although the first MGAT-encoding cDNA, designated MGAT1, has been recently isolated, it is not expressed in the small intestine and hence cannot account for the high intestinal MGAT enzyme activity that is important for the physiology of fat absorption. In the current study, we report the identification of a novel MGAT, designated MGAT3, and present evidence that it fulfills the criteria to be the elusive intestinal MGAT. MGAT3 encodes a approximately 36-kDa transmembrane protein that is highly homologous to MGAT1 and -2. In humans, expression of MGAT3 is restricted to gastrointestinal tract with the highest level found in the ileum. At the cellular level, recombinant MGAT3 is localized to the endoplasmic reticulum. Recombinant MGAT3 enzyme activity produced in insect Sf9 cells selectively acylates 2-monoacylglycerol with higher efficiency than other stereoisomers. The molecular identification of MGAT3 will facilitate the evaluation of using intestinal MGAT as a potential point of intervention for antiobesity therapies.

L10 ANSWER 3 OF 5 MEDLINE on STN
ACCESSION NUMBER: 96069598 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 7590346
TITLE: Cloning and chromosomal mapping of the mouse Mgat3 gene encoding N-acetylglucosaminyltransferase III.
AUTHOR: Bhaumik M; Seldin M F; Stanley P
CORPORATE SOURCE: Department of Cell Biology, Albert Einstein College of Medicine, New York, NY 10461, USA.
CONTRACT NUMBER: HG 00734 (NHGRI)
P01 13330
R37 30645
SOURCE: Gene, (1995 Oct 27) Vol. 164, No. 2, pp. 295-300.
Journal code: 7706761. ISSN: 0378-1119.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-L39373
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 24 Jan 1996
Last Updated on STN: 6 Feb 1998
Entered Medline: 26 Dec 1995

AB Complex and hybrid N-linked carbohydrates synthesized by mammalian cells may possess a N-acetylglucosamine residue known as the bisecting GlcNAc. The transfer of this residue is catalyzed by the enzyme UDP-N-acetylglucosamine:beta-D-mannoside beta 1,4-N- acetylglucosaminyltransferase

III (GlcNAc-TIII; EC 2.4.1.144). To begin to investigate biological functions for carbohydrates with a bisected GlcNAc residue, we have cloned and partially characterized the mouse gene (Mgat3) encoding GlcNAc-TIII. A rat GlcNAc-TIII-encoding cDNA was used to isolate clones from a mouse strain 129 Sv liver genomic DNA library. An NsiI genomic DNA fragment containing an ORF with 96% identity to rat GlcNAc-TIII was subcloned into a mammalian expression vector and transfected into Chinese hamster ovary (CHO) cells. The transfectants expressed GlcNAc-TIII activity only when the ORF was in the sense orientation. Southern analysis showed that Mgat3 is present in a single copy in the mouse genome. Mapping by restriction-fragment length polymorphism analysis of backcross progeny located Mgat3 to mouse chromosome 15, at a position homologous with region 22q12.3-q13.1 in the human genome. Northern analyses of adult tissues showed that Mgat3 is expressed at high levels in kidney and brain, and at lower levels in many other tissues.

L10 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1314312 HCAPLUS Full-text
DOCUMENT NUMBER: 144:68264
TITLE: Minimal common regions in chromosomes showing changes in copy number in cancers and their use in the diagnosis, prevention, and treatment
INVENTOR(S): Chin, Lynda
PATENT ASSIGNEE(S): Dana-Farber Cancer Institute, Inc., USA
SOURCE: PCT Int. Appl., 152 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005118869	A2	20051215	WO 2005-US18850	20050527

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2004-575795P P 20040528
US 2004-580337P P 20040615

AB Small chromosomal regions, minimal common regions (MCRs) that show a change in copy number in neoplastic tissue are identified for use in the early diagnosis of cancer and as markers in the prevention and treatment of the disease.

L10 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1069970 HCAPLUS Full-text
DOCUMENT NUMBER: 142:368432
TITLE: Molecular analysis of three gain-of-function CHO mutants that add the bisecting GlcNAc to N-glycans
AUTHOR(S): Stanley, Pamela; Sundaram, Subha; Tang, Jian; Shi, Shaolin

CORPORATE SOURCE: Department of Cell Biology, Albert Einstein College of Medicine, New York, NY, 10461, USA
SOURCE: Glycobiology (2004), Volume Date 2005, 15(1), 43-53
CODEN: GLYCE3; ISSN: 0959-6658
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB LEC10 Chinese hamster ovary (CHO) cells are gain-of-function mutants that express N-acetylglucosaminyltransferase III (GlcNAc-TIII), the glycosyltransferase that adds the bisecting GlcNAc to complex N-glycans. LEC10 cells are useful for glycosylation engineering of recombinant glycoproteins, including antibody therapeutics, for defining lectin recognition specificities and for determining biol. functions of the bisecting GlcNAc. We show that three CHO mutants, LEC10, LEC10A, and LEC10B, arose due to transcriptional activation of the quiescent CHO Mgat3 gene. They each express Mgat3 gene transcripts of .apprx.4.7 kb at different levels (LEC10B > LEC10 > LEC10A). Southern analyses gave a single band in LEC10, LEC10A, and parent CHO DNA with four restriction enzymes but an addnl. band with three of them in LEC10B genomic DNA, indicative of a duplication event in LEC10B. The deduced amino acid sequence of the Mgat3 gene expressed in each CHO mutant and in parent CHO genomic DNA is identical. However, 5' UTR sequences differ with LEC10 and LEC10B containing a 5' UTR segment of the Atf4 gene downstream of the Mgat3 gene in human and mouse. Somatic cell hybrid anal. indicated that the LEC10B Mgat3 gene was induced by a cis mechanism. LEC10B glycoproteins bound more erythroagglutinin lectin (E-PHA) than LEC10 glycoproteins and MALDI-TOF MS revealed a broad spectrum of complex, bisected N-glycans expressed by the LEC10B mutant. LEC10B is therefore the cell line of choice for producing recombinant glycoproteins carrying bisected N-glycans and for investigating biol. functions of the bisecting GlcNAc.
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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FULL ESTIMATED COST	30.64	30.85

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-2.25	-2.25

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FILE 'BIOSIS' ENTERED AT 11:14:02 ON 11 AUG 2006
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=> s Acyl Coenzyme A:Monoacylglycerol Acyltransferase-3
L1            5 ACYL COENZYME A:MONOACYLGLYCEROL ACYLTRANSFERASE-3

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2            2 DUP REM L1 (3 DUPLICATES REMOVED)

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L2   ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:634033  HCAPLUS  Full-text
DOCUMENT NUMBER:          141:169982
TITLE:                    Polynucleotide encoding human acyl-
                          coenzyme A:monoacylglycerol
                          acyltransferase-3 and its diagnostic
                          and therapeutic uses with regard to disorders in
                          dietary fat absorption
INVENTOR(S):              Feder, John N.; Nelson, Thomas C.; Chen, Jian;
                          Meegalla, Rupalie; Ramaker, Michael; Cheng, Dong
PATENT ASSIGNEE(S):       Bristol-Myers Squibb Company, USA
SOURCE:                   PCT Int. Appl., 181 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
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     WO 2004065551         A2    20040805    WO 2004-US1431          20040121
     WO 2004065551         A3    20050203
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             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
     AU 2004206250         A1    20040805    AU 2004-206250          20040121
     US 2004223959         A1    20041111    US 2004-761905          20040121
     EP 1585815            A2    20051019    EP 2004-704009          20040121
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRIORITY APPLN. INFO.:                      US 2003-441567P     P  20030121
                                            WO 2004-US1431      W  20040121
AB   The present invention provides novel polynucleotides encoding acyl-
     CoA:monoacylglycerol acyltransferase-3 (MGAT3, EC 2.3.1.22) polypeptides,
     fragments and homolog thereof, identified using bioinformatic methods and
     cloned using mol. techniques.  Also provided are vectors, host cells,
     antibodies, and recombinant and synthetic methods for producing said
     polypeptides.  MGAT3 fulfills the criteria as the MGAT that is responsible for
     the absorption of dietary fat.  The expression profile of human MGAT3 is
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highly restricted to the gastrointestinal tract, and steady state levels are significantly lower in ileum RNA from Crohn's disease than that isolated from normal tissues. The invention further relates to diagnostic and therapeutic methods for applying these novel MGAT3 polypeptides to the diagnosis, treatment, and/or prevention of various diseases and/or disorders related to these polypeptides, such as obesity. The invention further relates to screening methods for identifying agonists and antagonists of the polynucleotides and polypeptides of the present invention.

L2 ANSWER 2 OF 2 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003173829 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12618427
TITLE: Identification of acyl coenzyme A:monoacylglycerol acyltransferase 3, an intestinal specific enzyme implicated in dietary fat absorption.
AUTHOR: Cheng Dong; Nelson Thomas C; Chen Jian; Walker Stephen G; Wardwell-Swanson Judith; Meegalla Rupalie; Taub Rebecca; Billheimer Jeffrey T; Ramaker Michael; Feder John N
CORPORATE SOURCE: Pharmaceutical Research Institute, Bristol-Myers Squibb Company, Princeton, New Jersey 08543, USA.
SOURCE: The Journal of biological chemistry, (2003 Apr 18) Vol. 278, No. 16, pp. 13611-4. Electronic Publication: 2003-03-03.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AY229854
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 16 Apr 2003
Last Updated on STN: 23 May 2003
Entered Medline: 22 May 2003

AB Acyl coenzyme A:monoacylglycerol acyltransferase (MGAT) catalyzes the synthesis of diacylglycerol using 2-monoacylglycerol and fatty acyl coenzyme A. This enzymatic reaction is believed to be an essential and rate-limiting step for the absorption of fat in the small intestine. Although the first MGAT-encoding cDNA, designated MGAT1, has been recently isolated, it is not expressed in the small intestine and hence cannot account for the high intestinal MGAT enzyme activity that is important for the physiology of fat absorption. In the current study, we report the identification of a novel MGAT, designated MGAT3, and present evidence that it fulfills the criteria to be the elusive intestinal MGAT. MGAT3 encodes a approximately 36-kDa transmembrane protein that is highly homologous to MGAT1 and -2. In humans, expression of MGAT3 is restricted to gastrointestinal tract with the highest level found in the ileum. At the cellular level, recombinant MGAT3 is localized to the endoplasmic reticulum. Recombinant MGAT3 enzyme activity produced in insect Sf9 cells selectively acylates 2-monoacylglycerol with higher efficiency than other stereoisomers. The molecular identification of MGAT3 will facilitate the evaluation of using intestinal MGAT as a potential point of intervention for antiobesity therapies.

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(FILE 'HOME' ENTERED AT 11:13:43 ON 11 AUG 2006)

FILE 'MEDLINE, HCAPLUS, EMBASE, BIOSIS' ENTERED AT 11:14:02 ON 11 AUG 2006

L1 5 S ACYL COENZYME A:MONOACYLGLYCEROL ACYLTRANSFERASE-3

L2 2 DUP REM L1 (3 DUPLICATES REMOVED)